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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/749,252	12/27/2000	Yukihisa Takeuchi	789_064	5799

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EXAMINER

TRA, TUYEN Q

ART UNIT PAPER NUMBER

2873

DATE MAILED: 02/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/749,252

Applicant(s)

TAKEUCHI ET AL.

Examiner

Tuyen Q Tra

Art Unit

2873

-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6-30 is/are allowed.
- 6) ☒ Claim(s) 1-5, 31 and 32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 December 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 11-14, 17. 6) ☐ Other:

DETAILED ACTION

Drawings

1. Drawings (1, 4, 15 and 39) are objected because Figures 1, 4, 15 and 39 show, a state of load, where the picture of element assembly is in contacts the optical waveguide plate.

There should be an "air gap" between optical waveguide plate (14) and transparent layer (36) when the device in state of load since power source is applied to electrodes (28, 30) as shown in Figures (1, 4, 15, 39).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-5, 31 and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Takeuchi et al. (U.S. Pat. 5,862,275A).

a) With respect to claim 1, Takeuchi et al. discloses a display device in Figure 1 and 29 comprising of an actuator substrate (24) having an actuator element (22, 28), an optical waveguide plate (12), a crosspiece intervening between the optical waveguide plate (12) and the actuator substrate (24) and surrounding the actuator element (22, 28), and a picture element assembly (32) join onto the actuator element (22, 28), wherein the picture element assembly (32), in state of no load, is disposed closely to, or it makes contact with the optical waveguide plate (12) so as to cause light (70) to be emitted from the optical waveguide plate (12).

b) With respect to claim 2, Takeuchi et al. further discloses that distance between the picture element assembly (32) and the optical waveguide plate (12) in the state of no load is not more

than 30 % of a distance of separation between the picture element assembly 18 and the optical waveguide plate (12) in a driving state (Fig.1 & 29).

c) With respect to claim 3, Takeuchi et al. further discloses wherein the picture element assembly (32) and the optical waveguide plate (12) are allowed to make pressed contact with each other applying a voltage having a polarity opposite to that of a voltage to be applied to the actuator element (22, 28) in order to separate the picture element assembly (32) from the optical waveguide plate (12).

d) With respect to claim 4, Takeuchi et al. discloses a display device in Figure 1 & 38 comprising of an actuator substrate (24) having an actuator element (22, 28), an optical waveguide plate (12), a crosspiece intervening between the optical waveguide plate (12) and the actuator substrate (24) and surrounding the actuator element (22, 28) and a picture element assembly (32) join onto the actuator element (22, 28) wherein the picture element assembly (32) is, in state of no load, pressed contact with the optical waveguide plate so as to cause light to be emitted from the optical waveguide plate (12).

e) With respect to claim 5, Takeuchi et al. further discloses wherein the picture element assembly (32) is in the pressed contact with the optical waveguide plate by being urged toward the optical waveguide plate (12) due to the elasticity of a thin-walled section of the actuator substrate when the actuator element is in the state of no load.

f) With respect to claim 31, Takeuchi et al. discloses a display device in Figure 1 and 29 comprising of an actuator substrate (24) having an actuator element (22, 28), an optical waveguide plate (12), a crosspiece intervening between the optical waveguide plate (12) and the actuator substrate (24) and surrounding the actuator element (22, 28), and a picture element

assembly (32) join onto the actuator element (22, 28), wherein the picture element assembly and the optical waveguide plate (12) are brought into pressed contact with one another when a voltage is applied having a polarity opposite to that of a voltage to be applied to the actuator element (22, 28) to separate the picture element assembly (32) from the optical waveguide plate (12), in state of no load, is disposed closely to, or it makes contact with the optical waveguide plate (12) so as to cause light (70) to be emitted from the optical waveguide plate (12).

g) With respect to claim 32, Takeuchi et al. further discloses that distance between the picture element assembly (32) and the optical waveguide plate (12) in the state of no load is not more than 30 % of a distance of separation between the picture element assembly 18 and the optical waveguide plate (12) in a driving state (Fig. 1 & 29).

Allowable Subject Matter

4. Claims 6-30 are allowed.

The reason for the indication of allowable subject matter is that (claims 6, 16) a step of forming a crosspiece precursor, step of forming a picture element assembly precursor, step of joining the actuator substrate and the optical waveguide, step of hardening the picture element assembly, step of hardening the crosspieces precursor; (claim 12) a step of forming picture element, a step of forming a crosspieces precursor, a step of joining the substrate and the optical waveguide plate, a step of hardening picture element assembly precursor, a step of hardening the crosspiece precursor; (claim 22) a step of forming a crosspiece precursor, step of forming a picture element assembly precursor, step of joining the actuator substrate and the optical waveguide, step of hardening the picture element assembly wherein the step of hardening picture element assembly precursor is carried out, hardening is performed in a state in which said

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actuator element is displaced, and said picture element assembly precursor abuts against the optical waveguide; (claim 27) a step of forming a first precursor of a first part of a picture element, a step of forming a crosspiece precursor, a step of defining an upper surface of the crosspiece precursor, a step for forming a second precursor of a second part of the picture element assembly, a step for joining an optical waveguide plate and the actuator substrate, a step of hardening the second precursor disclosed in the claims is not found in the prior art.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Takeda et al. (U.S. Pat. 6,381,381) discloses display device having an actuator element, an optical waveguide plate, an actuator substrate, a picture element assembly.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuyen Tra whose telephone number is (703) 306-5712. The examiner can normally be reached on Monday to Friday from 8:30am to 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps, can be reached on (703) 308-4883. The fax number for this Group is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

Examiner: Tuyen Tra

Date: January 16, 2003


Hung Xuan Dang
Primary Examiner